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In the Claims

Kindly cancel Claims 11-16.

Kindly amend Claims 1, 4-5, 7-10, and 17-19 as follows:

1. (Twice Amended) In an aerobic wastewater treatment plant comprising:

a vessel defining an aeration chamber and having a substantially flat bottom wall and a cylindrical side wall,

[an] said aeration chamber containing aerobic bacteria into which wastewater containing organic solids flows to be exposed to aerobic bacteria to [convert] aerobically digest the organic solids in the wastewater [to water and CO₂][, said aeration chamber having a bottom and side walls],

[means] an aeration system [for injecting an oxygenation gas into the wastewater] in the aeration chamber to support growth of the aerobic bacteria, and

a clarifier chamber formed in said vessel and into which wastewater from the aeration chamber flows upwardly toward an outlet pipe through which the wastewater flows from the wastewater treatment plant, said clarifier chamber being defined by a partition in the form of an inverted, truncated cone into the bottom of which the wastewater flows from the aeration chamber,

the improvement [comprising a diffuser] wherein said aeration system [for releasing the oxygenation gas as bubbles into the aeration chamber of the wastewater treatment plant, said diffuser] forms an aeration area adjacent [the intersection of the bottom and side walls of the vessel and [providing] provides sufficient flow such that all solids suspended within the plant are forced into circulation, [said diffuser being placed close to the bottom of the aeration chamber of the wastewater treatment plant and close to the side wall of the aeration chamber,] said [diffuser] aeration system providing sufficient oxygenation gas to allow the aerobic bacteria to

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[convert] digest the organic solids in the wastewater [into CO₂ and water] and a current pattern having at least one first component flowing upwardly in a direction perpendicular to the bottom wall of the vessel and parallel to the side wall of the vessel, second and third components that flow in opposite directions around the partition which defines the clarifier chamber, a fourth component that flows along the opposite side wall to the bottom, a fifth component that flows across the bottom under the opening to the clarifier chamber, and sixth and seventh components that flow in opposite directions adjacent the bottom wall of the vessel.

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4. (Twice Amended) The wastewater treatment plant of claim 3 [wherein said oxygenation gas injecting means further comprises], further including:
a drop line having a first end attached to an external oxygenation source and a second end open to dispense oxygenation gas received from the external oxygenation gas source, said second end being attached to said [diffuser] aeration system.

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5. (Amended) The wastewater treatment plant of claim 4 [wherein said oxygenation gas injecting means further comprises], further including:
a rigid conduit mounted to the inside of the wastewater treatment plant for receiving and firmly securing the drop line such that the drop line extends from the oxygenation source towards the bottom of the plant.

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7. (Twice Amended) In an aerobic wastewater treatment plant comprising:
a vessel having a substantially flat, bottom wall and a cylindrical side wall and defining an aeration chamber into which the wastewater flows to be exposed to aerobic bacteria to [convert] aerobically digest the organic solids in the wastewater [to water and CO₂], [said aeration chamber having a bottom and side walls,]
[means for injecting an oxygenation gas into the wastewater in the aeration chamber to support growth of the aerobic bacteria,] and

a clarifier chamber in which wastewater from the aeration chamber flows upwardly toward an outlet pipe through which the wastewater flows from the wastewater treatment plant, said clarifier chamber being defined by a partition disposed in said vessel, said partition being in the form of an inverted, truncated cone into the bottom of which the wastewater flows from the aeration chamber,

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the improvement comprising means [to generate] for injecting an oxygenation gas and generating a wastewater current pattern in the aeration chamber[, the current flowing upwardly] from [at a position] an aeration area close to the bottom and the side wall of the [aeration chamber,] vessel, the current pattern having at least one first component flowing upwardly in a direction perpendicular to the bottom wall of the [aeration chamber] vessel and parallel to the side wall of the [aeration chamber] vessel, [then] second and third components that flow in opposite directions around the partition which defines the clarifier chamber, [then downwardly] a fourth component that flows along the opposite side wall to the bottom [and then] a fifth component that flows across the bottom under the opening to the clarifier chamber and, and sixth and seventh components that flow in opposite directions around the side wall of the [aeration chamber] vessel adjacent the bottom wall of the [chamber] vessel to keep solids from settling on the bottom of the aeration chamber.

8. **(Amended)** The method of creating a current pattern inside an aeration chamber of a wastewater treatment plant, said aeration chamber having a bottom and side walls, comprising the step of

injecting an oxygenation gas such that a current pattern is produced in the aeration chamber, the current pattern having a first component flowing upwardly from a position close to the bottom and side wall of the aeration chamber in a direction perpendicular to the bottom of the aeration chamber and parallel to the side wall of the aeration chamber, [then] first and

second components flowing in opposite directions around the partition which defines a clarifier chamber, [then] a third component flowing downwardly along the opposite side wall to the bottom [and then], a fourth component flowing across the bottom under an opening to the clarifier chamber, and fifth and sixth components flowing in opposite directions around the side wall of the aeration chamber adjacent the bottom of the aeration chamber to keep solids from settling on the bottom of the aeration chamber.

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Cont.
9. (Twice Amended) An aerobic wastewater treatment plant comprising:

an aeration chamber containing aerobic bacteria into which wastewater [containing aerobic bacteria into which wastewater containing organic solids] flows to be exposed to aerobic bacteria to [convert] digest the organic solids in the wastewater [to water and CO₂], said aeration chamber having a substantially flat, bottom wall and a cylindrical side wall[s],

[means for injecting an oxygenation gas into the wastewater in the aeration chamber to support growth of the aerobic bacteria,]

a clarifier chamber into which wastewater from the aeration chamber flows upwardly toward an outlet pipe through which the wastewater flows from the wastewater treatment plant, said clarifier chamber being defined by a partition in the form of an inverted, truncated cone into the bottom of which the wastewater flows from the aeration chamber, said bottom wall providing a substantially planar surface under said partition.

[a diffuser] an aeration system for releasing [the] an oxygenation gas as bubbles into the aeration chamber of the wastewater treatment plant, said [diffuser] aeration system providing an aeration area and sufficient flow such that all solids suspended within the plant are forced into a circulation pattern, said [diffuser] aeration system being placed close to the bottom of the aeration chamber of the wastewater treatment plant and close to the side wall of the aeration chamber, said [diffuser] aeration system providing sufficient oxygenation gas to allow the

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aerobic bacteria to [convert] digest the solids in the wastewater [into CO₂ and water] and a current pattern having at least one first component flowing upwardly in a direction perpendicular to the bottom wall of the vessel and parallel to the side wall of the vessel, second and third components that flow in opposite directions around the partition which defines the clarifier chamber, a fourth component that flows along the opposite side wall to the bottom, a fifth component that flows across the bottom under the opening to the clarifier chamber, and sixth and seventh components that flow in opposite directions adjacent the bottom wall of the vessel.

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10. (Twice Amended) An aerobic wastewater treatment plant comprising:

an aeration chamber into which the wastewater flows to be exposed to aerobic bacteria to [convert] aerobically digest the organic solids in the wastewater [to water and CO₂], said aeration chamber having a substantially flat, bottom wall and a cylindrical side wall[s],

[means for injecting an oxygenation gas into the wastewater in the aeration chamber to support growth of the aerobic bacteria,]

a clarifier chamber in which wastewater from the aeration chamber flows upwardly toward an outlet pipe through which the wastewater flows from the wastewater treatment plant, said clarifier chamber being defined by a partition in the form of an inverted, truncated cone into the bottom of which the wastewater flows from the aeration chamber, and

means for injecting an oxygenation gas and generating a wastewater current pattern in the aeration chamber [in an area adjacent the intersection of said side wall and said bottom wall], the current pattern having at least one first component flowing upwardly from [a position close to the bottom and the side wall of the aeration chamber] [said area] in a direction perpendicular to the bottom of the aeration chamber and parallel to the side wall of the aeration chamber, [then] second and third components that flow in opposite directions around the partition which defines the clarifier chamber, [then] a fourth component that flows downwardly along the opposite side

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wall to the bottom, [and then] a fifth component that flows across the bottom under the opening to the clarifier chamber, and sixth and seventh components that flow in opposite directions around the side wall of the aeration chamber adjacent the bottom of the chamber to keep solids from settling on the bottom of the aeration chamber.

Juls E1 → 17. (Amended) The wastewater treatment plant of claim 1 wherein said [diffuser] aeration system comprises multiple diffusers.

B7 → 18. (Amended) The wastewater treatment plant of claim 7 wherein said means to generate said current comprises [a diffuser] an injection system for creating an injection area adjacent the intersection of said side wall and said bottom wall.

19. (Amended) The wastewater treatment plant of claim 18 wherein said [diffuser] injection system comprises multiple diffusers.

Claims 20-24, newly added in the previously filed Preliminary Amendment, are presented below with markings to indicate newly added claims pursuant to 37 C.F.R. §1,121(b)(2)(i)(C):

B8 → 20. (Newly Added) The method of claim 8 wherein injection of said oxygenation gas is through a diffuser system.

21. (Newly Added) The method of claim 20 wherein injection of said oxygenation gas is through multiple diffusers.

B8 → 22. (Newly Added) The wastewater treatment plant of claim 9 wherein said aeration system comprises multiple diffusers.

23. (Newly Added) The wastewater treatment plant of claim 10 wherein said means for generating said current pattern comprises a diffuser system.

24. (Newly Added) The wastewater treatment plant of claim 23 wherein said diffuser system comprises multiple diffusers.

STATUS OF CLAIMS

Pending: Claims 1, 3-10, and 17-24

Cancelled: Claims 2 and 11-16